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ABSTRACT

A literature-based reading program was introduced to 98 students in 5 second-grade classrooms in an urban school district with a socioeconomic status ranging from middle class to disadvantaged. Students were primarily African American or Hispanic. Of the total, 22% had previously been classified as "at risk" as determined by state regulations. The program had three major components: (1) systematically designed and administered classroom literacy centers; (2) a steady series of teacher-led activities involving literature; and (3) a regular schedule of independent reading and writing periods (IRWPs). Managed according to consistent and clearly explained expectations or rules, IRWPs emphasized individual student selection from a wide variety of activities and materials while offering students the opportunity to work alone or in small groups. Teachers were encouraged to serve as facilitators and participants in the IRWPs rather than as traditional teachers, although they continued to teach a separate basal reading program for their students. Research assistants collected data both by direct observation of IRWPs that they reported in field notes, and by videotaping sessions. Qualitative analysis of the data indicated positive motivation and acceptance of the program among students, including those considered "at risk," and a positive commitment to the program by all five teachers who participated. (A figure representing the contexts, processes, and outcomes fostered by cooperative literacy settings is included.) (Contains 80 references.) (Author/RS)

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Promoting Independent Reading and Writing Through Self-Directed Literacy Activities In A Collaborative Setting

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READING RESEARCH REPORT NO. 2
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The National Reading Research Center (NRRC) is funded by the Office of Educational Research and Improvement of the U.S. Department of Education to conduct research on reading and reading instruction. The NRRC is operated by a consortium of the University of Georgia and the University of Maryland College Park in collaboration with researchers at several institutions nationwide.

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National Reading Research Center
Universities of Georgia and Maryland
Reading Research Report No. 2
Spring 1993

Promoting Independent Reading and Writing Through Self-Directed Literacy Activities in a Collaborative Setting

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Abstract. A literature-based reading program was introduced into five second grade classrooms ($N = 98$) in an urban public school district (SES, middle class to disadvantaged). Students were primarily African American or Hispanic. Twenty-two percent of the total had previously been classified as "at risk" as determined by state regulations.

The program had three major components: (a) systematically designed and administered classroom literacy centers, (b) a steady series of teacher-led activities involving literature, and (c) a regular schedule of independent reading and writing periods (IRWPs). Managed according to consistent and clearly explained expectations or rules, IRWPs emphasized individual student selection from a wide variety of activities and materials while offering students the opportunity to work alone or in small groups. Teachers were encouraged to serve as facilitators and participants in the IRWPs rather than as traditional teachers, although they continued to teach a separate basal reading program for their students.

Research assistants collected data both (a) by direct observations of IRWPs that they reported in field notes, and (b) by videotaping sessions. Qualitative analysis of the data indicated positive motivation and acceptance of the program among students, including those considered "at risk," and a positive commitment to the program by all five teachers who participated.

The engagement perspective discussed by the National Reading Research Center (1991) suggests that reading programs should develop engaged readers who are (a) motivated to read voluntarily for pleasure and information, (b) able to use multiple skills strategically to read and understand independently, (c) able to use background information to gain knowledge from new material, (d) able to transfer and apply that knowledge to new contexts, and (e) able to approach literacy learning socially by enlisting the help of others to gain competency. According to the engagement perspective, early literacy instruction should emphasize developing a child with strategic skills who is motivated to read for both pleasure and information. To promote such development, programs need to be designed to provide social

settings for learning and help children function in them. A literature-based reading program designed to meet these criteria included the following: (a) classroom literacy centers that made a wide variety of literacy activities available to children; (b) pleasurable, teacher-guided activities that provided models for independent literacy activities; and (c) independent reading and writing periods in which children could choose to work alone or with others in any of several different literacy activities. These periods permitted student choice while encouraging social cooperation and practice. An experimental study (Morrow, 1992) showed that, when compared with a control group, students who participated in the program gained significantly in story retelling, story rewriting, creation of oral and written stories, probed recall comprehension test results, vocabulary, and syntactic complexity.

While that experimental study confirmed that the literature-based program had positive effects on achievement, it raised three issues that deserved further inquiry: a) It did not explore the processes by which the program — as enacted through new rules for behavior and use of space — achieved its effects; (b) it did not explore the full range of outcomes; and (c) it did not address the questions raised by those teachers reluctant to allow independent periods of reading and writing that involve self-selection of materials. Some teachers, for instance, believe that children do not engage in serious learning without direct instruction. Many are especially concerned that literature-based programs may be inappropriate for children who have difficulty learning, who are considered "at risk," or who have other special needs. Their concerns have been compounded by the suggestion that direct instruction is the most effective strategy for helping such students acquire acceptable skills in reading, writing, and speaking (Delpit, 1988).

To explore these issues, a qualitative analysis of the independent reading and writing portion of the program was conducted simultaneously with the experimental study. The analysis included data obtained both by direct observation and by videotaping to illustrate the social and learning processes that occurred during IRWPs; it explored a wider range of outcomes than was measured experimentally, and revealed specific similarities and differences among children of different ethnic groups, "ability" levels, and special education classifications. The qualitative research can both triangulate the results of the experimental study and suggest possible additional outcomes that might not have been tested in the original experimental design.

BACKGROUND

From the instructional perspective of integrated language arts, children develop literacy through authentic experiences—that is, through active engagement in tasks that are meaningful and functional for them. Authentic experiences are promoted by using children's literature, newspapers, and magazines as the main source of materials for children's reading and writing activities, which take place within rich literacy environments created specifically to encourage social collaboration and cooperative learning during periods devoted to independent reading and writing. Instruction includes a conscious effort to integrate literacy learning with different content areas throughout the school day, and emphasizes learning that is largely self-regulated through student choice. Teachers and children share responsibility for

deciding instructional strategies, organization, activities, and materials (Bergeron, 1990; Goodman, 1989a; Goodman, 1989b; Morrow, 1992; Teale, 1984). Social interaction and cooperation within small groups of students promotes achievement and productivity (Johnson, Maruyama, Johnson, Nelson & Skon, 1981; Slavin, 1983). Yager, Johnson, and Johnson (1985) posit two important elements in the dynamics of cooperative learning: (a) oral interaction among students, and (b) heterogeneity among group members. According to their findings, cooperative learning succeeds because it allows children to explain material to each other, to listen to each other's explanations, and to arrive at joint understandings of what they have shared. The cooperative learning setting enables "more capable peers" to offer support to others. Cazden (1986) points out that peer interaction allows students to attempt a range of roles they would be denied by the asymmetrical power relations of traditional student-teacher participant structures. Forman and Cazden (1985) also indicate that Vygotsky's theory (1978) led them to conclude that an interactional transformation can occur among peers when one student is observing, guiding, and correcting as another performs a task: The students accomplish together what neither can do alone. In other words, working in peer dyads allows many of the same learning opportunities as tutoring.

Forman and Cazden's discussion reflects both Dewey's (1916) argument that children engaged in task-oriented dialogue with peers can reach higher levels of understanding than they do when teachers present information didactically, and Piaget's (1959) suggestion that childhood peers serve as resources for one another in cognitive development.

Other benefits of social settings and cooperative learning in addition to increased productivity and achievement have been reported. With less dependence on the teacher, for instance, learning appears to be more intrinsically motivated (Wood, 1990). Children who ordinarily work alone choose to collaborate in cooperative settings — even forming friendships — and there is greater acceptance of differences among students (Slavin, 1990). High and low achievers work together in cooperative learning settings, and positive relations increase among children from varied racial and ethnic backgrounds (Augustine, Gruber & Hanson, 1990; Kagan et al., 1985; Morrow, 1992). Finally, children with special needs such as physical disabilities, emotional handicaps, and learning difficulties are more likely to be accepted by other children in cooperative learning settings than in more traditional classrooms (Johnson & Johnson, 1981; Lew, Johnson & Johnson, 1986; Morrow, 1992).

Benefits of Using Literature in Literacy Programs

Children's literature can be an important source of instruction. Earlier correlational research has shown that children exposed to literature at a young age tend to develop more sophisticated vocabulary and syntax (Chomsky, 1972). Cohen (1968) concluded that language development correlates with reading success, and that both can be improved by regular exposure to children's literature. Children exposed to children's literature accumulate background knowledge not only about the content of what is read, but also about how language works and how written language differs from spoken. Such children tend to

learn to read early and to enjoy reading (Durkin, 1966).

More recent research supports the importance of providing children with daily opportunities to experience literature in active, pleasurable ways, such as reading and telling stories; sharing books; discussing stories literally, interpretively, and critically; responding to literature both orally and in writing; integrating literature into themes being studied throughout the curriculum; and, more generally, participating in independent reading and writing (Hoffman, Roser & Farest, 1988; Morrow, O'Connor & Smith, 1990). According to Felsenthal (1989), use of children's literature also provides an ideal opportunity to develop critical reading.

Current research indicates that reading is a constructive process — that is, readers have background knowledge that helps them construct meaning about what they read. Further, readers construct meaning as they interact with peers and adults in discussing stories (Jett-Simpson, 1989). The content of children's literature lends itself to drawing on background knowledge and using interactive strategies such as story discussions, role playing, and story retelling to help construct meaning from text. These strategies can be used with peers or adults.

Benefits of Independent Reading

The amount of independent reading done by children correlates with reading achievement (Connor, 1954; Greaney, 1980). Anderson, Fielding, and Wilson (1988) found that the number of minutes children reported spending on out-of-school reading correlated positively with reading achievement. Similarly, Taylor, Frye, and Maruyama (1990) found that the amount of time spent reading in school also contributed significantly to gains in students' reading achievement. Children who do a substantial amount of reading demonstrate positive attitudes toward reading (Greaney, 1980), and an element of personal motivation in self-directed independent reading apparently leads to greater interest and skill development (Irving, 1980).

Thus, research suggests that students' literacy learning benefits from settings in which they can work alone or in small groups, settings in which they have opportunities to

(a) observe others—adults or peers—engaged in literacy activities;

(b) practice independently, with the option of working alone or with others, choosing from a variety of available materials and from a variety of literacy activities;

(c) become involved independently in events or settings where they can use children's literature or other "authentic" reading materials.

These elements require a special type of learning setting and experience. The literature-based reading program described here was designed to provide such settings and experiences.

PROGRAM AND RESEARCH APPROACH

The Program

As noted earlier, the program consisted of three major components: (a) carefully designed classroom literacy centers, (b) pleasurable

teacher-directed literature activities, and (c) periods for independent reading and writing.

(1) Physical Design of Literacy Centers. Literacy centers were created in the classrooms to be easily accessible yet physically defined. They were located in a quiet portion of the room to afford an atmosphere of privacy. Along with regular bookshelves, they contained open-faced shelves for displaying the covers of selected books. Each center included five to eight books per child representing varied genres of children's literature, such as biographies, picture story books, novels, poetry, and magazines. Books were regularly rotated on and off the shelves, and there was a system for checking books out for use at home. Pillows, rugs, stuffed animals, and rocking chairs added comfort. Literature manipulatives such as feltboards and cutouts of story characters; tape recorders, story tapes, and headsets; puppets; chalk and chalkboards; and roll movies were readily available. In addition, each center had a clearly identified "Author's Spot," equipped with various kinds of paper, blank booklets, and writing utensils with which children could write stories and make books.

(2) Teacher-Guided Literature Activities. Each teacher was given a handbook describing various literature activities and specifying how frequently they were to be used. Suggested activities included reading aloud; retelling and rewriting stories; telling and writing original stories; telling stories using puppets, feltboards, or chalk (drawing a story as it is told); sharing books; checking books out; and having children record books they had read on index cards. Wherever possible, suggested activities emphasized (a) elements of story structure; (b) attention to the styles of authors and illustrators; (c) literal, interpretive, and critical issues related to stories; and, above all, (d) the joy of literature. The following example illustrates how children learned about the differences in the styles of illustrations.

> Mrs. Meechem's reading of the story *A Letter to Amy* (Keats, 1968) was followed by a discussion of the illustrations in the book. Jason said that the illustrations looked like real people, but that he thought that the pictures were paintings and not photographs. The teacher pointed out that Ezra Jack Keats illustrates stories with collages, weaving bits of newspaper, wallpaper, lace, and other materials into his paintings. After that story Mrs. Meechem read *Green Eggs and Ham* (Seuss, 1960) and discussed Dr. Seuss's illustrations. Patrick noted that the cartoon characters Dr. Seuss draws in his books don't look very real and sometimes even look silly.
>
> Following the two readings, Mrs. Meechem displayed other books by Keats and Dr. Seuss. The children compared illustrations and could easily determine which books were created by which illustrator.

The teacher played an important role in creating interest in the literature and other materials in the literacy center. In modeling the use of the materials and engaging the children in stimulating and productive discussions concerning books they read, she showed how enjoyable these activities could be, as the following episode illustrates:

> Mrs. Payton demonstrated the use of a feltboard and cutout characters. She asked Roseangela to place the appropriate figures on the board as she read the book *Are You My Mother?* (Eastman, 1960). To include all the children in the experience, she asked them to make appropriate sounds for animals in the story as Roseangela placed

those animal cutouts on the feltboard. At the end of the presentation, the children applauded.

Mrs. Payton suggested that they could follow the same procedure with *Are You My Mother?* and other stories. They could even make their own character cutouts.

(3) Independent Reading and Writing Periods (IRWP). From three to five times a week, children were given the opportunity to choose independently from a variety of literacy activities: they could read a book, write a story, read to a friend, listen to a taped story, tell a story with the feltboard, ask someone to read to them, check out books to take home, etc. Although the IRWP gave students unusual latitude, choices were available only within a framework of rules. Each IRWP was intended to emphasize a concept, such as story resolution, that had already been featured by the teachers. Children could choose to work alone or with others, but they were expected to stay with only one or two activities during each 30-minute independent period. The use of manipulatives had to be accompanied by or related to specific books. On task behavior was a particular goal for the IRWP. For the purposes of this investigation, "on task" meant children were involved in some activity that included reading, writing, or speaking. They could be reading a book, writing a story, performing a puppet show, planning the role playing of a story, or binding a book for a story they had written, etc.

During the IRWP, the teacher worked as a facilitator, helping children begin their individual or group activities, modeling behaviors as needed, reading books of their choice with or to children, and sharing manipulatives. Children were expected to record the tasks they had accomplished and share those records with the rest of the class. The following scene illustrates one teacher's role during an IRWP:

Mrs. Pelovitz sat with Patrick, Lewis, James, Tiffany and Shawna to look at the roll movie they had just created for the story *Mr. Rabbit and the Lovely Present*, written by Charlotte Zolotow and illustrated by Maurice Sendak (1962). She congratulated the group for a job well done, then became the audience when the students insisted on performing the roll movie for her.

At the end of their presentation, she commented that the pictures were "very vivid." James said he didn't know what *vivid* meant, so Mrs. Pelovitz defined the word for him. Before leaving the group, she said, "If Maurice Sendak, the illustrator of this story, were to walk in the door of our room right now, he would think that he had drawn the pictures for the movie."

Participants

The students in the literature-based program included five second grade classes (N=98, 50 boys, 48 girls) in an urban public school district. Two-thirds of the children in the study belonged to minority groups, mostly African American and Hispanic. Their socioeconomic status ranged from middle class to disadvantaged. Twenty-two percent of the students were classified as "at risk" as determined by state regulations; they attended special classes. Twenty-four received free lunches and were considered disadvantaged. Classes were heterogeneously grouped and similar to each other in educational program. The five teachers whose classrooms were observed were female, one African American and four European Americans. Their length of

service in teaching ranged from 6 to 25 years, with a mean of 14 years. Prior to this study they were all using traditional basal reading programs. The teachers received three days of intensive familiarization with the elements of the literature-based program. There were meetings twice a month to discuss procedures, concerns, and progress. Teachers were observed weekly to ensure that they were carrying out the program as intended.

Data Collection

Data were collected in three ways. First, five research assistants observed and recorded field notes for the 30-minute independent reading and writing periods in the five second grade classes. Those observations of IRWPs occurred once a week from October through May for a total of 128 observations over 64 hours, during which 714 episodes were recorded. Second, once a month, activities within a 30-minute IRWP in each of the five rooms were videotaped for a total of 16 hours. Finally, children and teachers were interviewed about their perceptions of the program and its three major components (literacy centers, literature-based instruction, and IRWPs). Triangulation through the use of the different approaches to data collection provided interrelated data from several different perspectives and allowed us to compare data from two or more different points in time.

Data collection proceeded through three phases (Corsaro, 1985; Lincoln & Guba, 1985). In the first month, observers familiarized themselves with the children and the teachers and established their roles as individuals collecting field notes or videotaping in the classroom. The first sets of field notes and videotapes were based on instructional guidesheets prepared for the research assistants. This first phase not only provided an initial data source for evaluating data quality and videos, but also allowed the refining and standardization of procedures to assure that the kinds of data sought were actually being collected. The second phase involved the collection of data based on those refined procedures for taking field notes and videotaping. The third phase was devoted to interviewing the teachers and children who participated.

The guidesheets developed by the investigators for the research assistants included instructions on how to observe ethnographically in an educational setting and how to focus on the behaviors of children and teachers during IRWPs. We relied on two kinds of observations: complete interaction episodes and scans. Complete interaction episodes were descriptions of events that occurred during IRWPs that were collected through notes and videos. These episodes were to thoroughly depict such issues as how students selected activities, how they interacted socially, and what literacy learning took place. Complete interaction episodes were to be followed from beginning to end and include dialogue. Data on interactions were to include group or personal goals, support given by group members to other group members, time on task, types of participation by different group members (leaders, followers), materials used, names of children, gender, and proxemics (i.e., body movement and use of space) (Bogdan & Biklen, 1982; Fetterman, 1984; Green & Wallat, 1981). This type of note-taking and videotaping is referred to by Barker (1963) as *the stream of behavior chronicle* because it records minute-by-minute what subjects do and say.

Episode records also noted the behavior of the teachers including the specific roles they played (e.g., participant, facilitator, instructor) and the nature of their dialogue (supportive, controlling, evaluative) in their interactions with the children. At least two teacher episodes were recorded during each observation.

In addition to recording complete interaction episodes, each observer was instructed to conduct a *scan* at least four times each half hour. A scan recorded the array of activity underway at a given moment, including the general atmosphere in the classroom, kinds of action occurring, movement, noise, and so forth.

Interviews were conducted one-to-one with teachers and children. While different interview outlines and questions were prepared for teachers and children, all were composed of open-ended questions, prepared in advance, which were designed to provide a framework within which respondents could express their understandings of the situation in their own terms (Patton, 1990).

Investigators and research assistants met weekly during the first three weeks of data collection. They shared notes and observations, viewed videotapes, and discussed transcriptions to determine if data being collected were consistent among observers in type and amount, and to assure that the data being collected actually focused on the questions being investigated. After the first three meetings, observers met twice a month to further clarify and standardize data collection procedures.

Data Analysis

Our approach to data analysis was not strictly inductive because we began with a strong theoretical base in previous research that had led to the development of the program being studied (Morrow, O'Connor, & Smith, 1990; Morrow, 1992). Nor was it strictly deductive because we wanted to discover and elaborate those processes that might link the physical and social aspects of the program with its outcomes as well as expand the range of outcomes considered (Rossman & Wilson, 1985). Adapting a research procedure used by Miles and Huberman (1984), we viewed the processes of data collection, data reduction, and data display, and the drawing and verifying of conclusions as interacting, each feeding the other. For example, meetings of research assistants and investigators at first focused mainly on data collection. Later they included data analysis as well as discussion of the broad categories and subcategories that emerged from our continued observations. These discussions refined and clarified the definitions of various analytic categories.

Periods of formal analysis alternated between macroanalysis, in which we identified broad patterns, and microanalysis, in which we assessed the frequency of specific categories (Alvermann, O'Brien, & Dillon, 1990). Both required frequent reading and rereading of field notes and transcripts and reviewing of videotapes. Macroanalysis further clarified the meaning of categories, identified their significance for literacy learning, and described and elucidated processes at work in the classroom. Microanalysis focused more specifically and rigorously on development of frequencies and percentages.

Episodes were coded by analytic categories. Episodes that could be placed in more than one category were coded into all appropriate categories. To determine overall frequency, the number of incidents within each category and subcategory was first totalled. Then the number of incidents in each subcategory was divided by the number of incidents within its main category to yield a percentage.

To determine reliability in the coding and categorizing of incidents, five people who were not participating in the research project were asked to code the same five recorded observations from IRWPs. Each observation came from a different classroom. The five coders were told the purpose of the study and given definitions of the categories and subcategories. They were shown how to categorize the incidents and then given the raw data to analyze. The reliability check indicated a high percentage of agreement among their coding decisions, ranging from 85% to 90% across all categories and subcategories.

RESULTS OF THE DATA ANALYSIS

An independent reading and writing period (IRWP) in a literacy center as reported here is characterized by a variety of behaviors. Children are engaged actively and cooperatively. They take turns, change roles, offer information, and make decisions as they engage in literacy activity, as the following scan of one classroom illustrates:

> In the literacy center, several children were curled up on the rug, leaning on pillows and silently reading books they had selected. Damien and Larry, squeezed tightly into one rocking chair, were sharing a book.
>
> Natalie, Shakiera, and Dharmesh were snuggled in a large refrigerator box that had been painted to make it look attractive. Furnished with stuffed animals to make it look cozy, the box created a "private spot" for reading. The three took turns reading the same book.
>
> Isabela and Veronica were using the feltboard and story characters for *The Three Bears* (Galdone, 1975), taking turns reading and manipulating the figures. When they came to repetitive phrases such as "Who's been sitting in my chair?" they read them together.
>
> Four children in headsets were listening to a tape of *The Little Engine That Could* (Piper, 1954). Each child held a copy of the book. Every time they came to the phrase they chanted along with the narrator, "I think I can, I think I can."
>
> Matthew and Gabriel were at the author's table writing an informational book about snakes, bouncing ideas back and forth. Several children were checking books out of the classroom library to take home to read, signing a form on a clipboard.
>
> Tashiba had multiple copies of a story that she handed out to other children. She made a circle of chairs where the group then sat as she pretended to be the teacher. She read to the others, occasionally stopping to ask if anyone else wanted a chance to read. Mrs. Bell, their teacher, sat in the circle with the children, taking her turn at reading when Tashiba called on her.

There is a pattern in this diverse activity. Figure 1 illustrates that pattern and shows how the physical and social context led to two analytically distinct but interrelated processes — literacy behavior and social interaction.

CONTEXTS, PROCESSES & OUTCOMES FOSTERED BY COOPERATIVE LITERACY SETTINGS

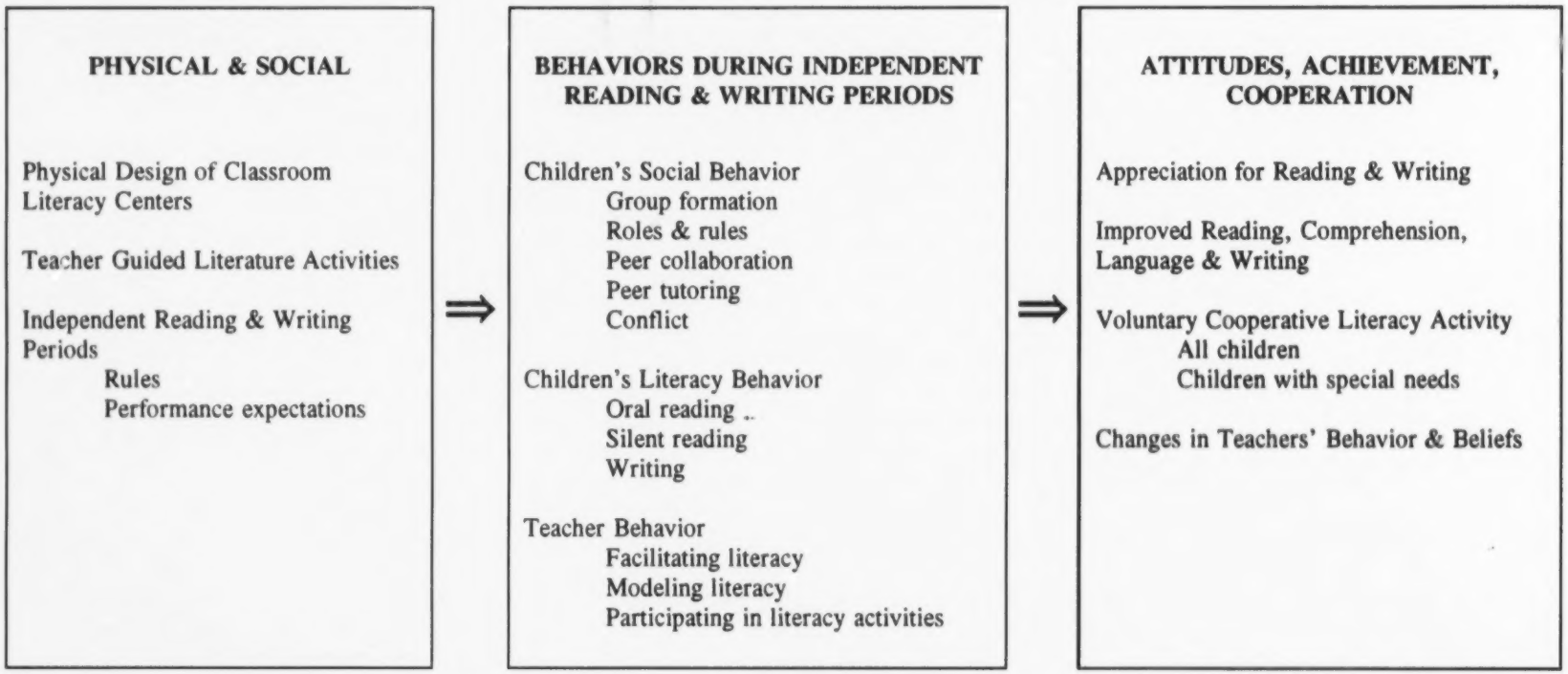

FIGURE 1

These behaviors in turn contributed to a wide range of positive outcomes. The next two sections describe the processes, including the social and literacy activities of student and teacher participants, and their outcomes.

PROCESSES DURING INDEPENDENT READING AND WRITING PERIODS

Social Processes

The scan presented at the end of the previous section implies correctly that collaborative incidents were constant and predominant during IRWPs. Collaboration in small groups promotes both achievement and productivity (Johnson, et al., 1981; Slavin, 1983). Johnson et al. (1981) noted that both oral interaction among students and heterogeneity among group members contribute to cooperative learning. They also found that learners with special needs benefit from the dialogue and interaction that occur in small groups, and suggested that higher levels of learning are achieved because children explain material to each other, listen to each other's explanations, and arrive at joint understandings.

Properly planned and implemented, the IRWP encourages students to form groups and develop their own rules and leadership patterns. Group settings, in turn, allow and accommodate peer collaboration, peer tutoring, conflict resolution, and nontraditional patterns of teacher-student interaction. Of the 714 incidents recorded in the project field notes, 318 included episodes of group behavior among students.

How Groups Formed. As noted earlier, children in this study could choose to work alone or with others during IRWPs. If they worked with others, they could choose their working companions. Before joining a group, a child could identify the task at hand and the nature of the group simply by asking what was happening or by observing before deciding whether or not to join. The following anecdote illustrates the process:

> Tiffany, Shawni, and Carla decided to read "scary" stories in the coat closet, where it was dark. The girls snuggled together and began to read. James stood nearby and watched for a short time. Understanding the nature of the group's activity through his observation, he asked to join them, and the girls agreed he could.
>
> Tiffany, the group's designated reader, continued to read. Patrick observed their activity and asked if he could join. He, too, was admitted. Gabriel stopped by, but apparently decided that the activity wasn't for him, and left to find something else to do.

It has been noted that self-selected group formation is often based on personal characteristics (Green & Wallat, 1981). A crucial characteristic in the classrooms observed was gender. Both boys and girls purposely formed single-gender groups, though mixed gender groups formed as well. In fact, in light of past research indicating that children tend to form single-gender groups (Lockheed, 1985; LaFreniere, Strayer, & Gauthier, 1984), it is significant that 41% of the 318 groups formed in the present study combined genders.

Single-gender groups frequently carried out activities that seemed stereotypical of the gender they represented. The activity of mixed-gender groups, on the other hand, tended not to illustrate sex stereotypes, as the following examples of an all-girl, an all-boy, and a mixed group indicate:

Kimberly and Antoinette looked at a cookbook together, reviewing recipes and making comments. Kimberly pointed to the index and said, "Look, Antoinette, here they have something with marshmallows. Let's look at that."

Antoinette said, "Wow, it's fruit salad with marshmallows! That looks good. I love fruit and marshmallows."

Eric, Damien, Alex, and Danny worked on a roll movie for the story *Kick, Pass, and Run* (Kessler, 1966). Danny said, "Hey, you guys! Eric and Damien, you draw the football field. I'll do the stands and the goal post with Danny." Eric asked if he could help with the goal post, but Danny said no, because there would then be too many people drawing the goal post. So he suggested that Eric draw spectators in the stands.

Mary, Tina, Jason, and Kevin were writing an original story and making cutout figures to use on the feltboard for presentation to the class. When they finished, they decided to tape the story. The group designated Mary as the reader, and Tina and Jason read silently as they followed along with her. Kevin followed the story and placed the cutouts characters on the feltboard as they were mentioned. Tina and Jason made sound effects for the story as needed. When they finished the reading, they played the tape back, listened, and giggled.

Groups ranged in size from two to five members, with two being most common. More than five members seemed to make a group less efficient and to increase the number of conflicts. When group membership surpassed five, individual children often left groups voluntarily. Girls tended to form groups of two, while all-boy and mixed-gender groups were often composed of three or more.

Counts to determine the overall composition of groups indicated that 80% were cross-race, cross-cultural, or included children with differing abilities. It appears that formation of most groups was based on interest and friendship.

Although working cooperatively in groups was common, many children also chose to work alone. They usually read silently, but some also told feltboard or chalk talk stories by themselves. Equal numbers of boys and girls chose to work alone.

Rules and Leadership Roles. When groups formed, they quickly established their own rules and leadership roles. Rules commonly involved defining work to be accomplished, assigning responsibilities for that work, and determining the acceptable quality of work. For example,

Tesha and Cassandra agreed to work together with a feltboard version of *The Gingerbread Boy* (Galdone, 1975). They decided to work on the floor. Cassandra told Tesha to carry the book and the cutout characters and she would bring the feltboard.

Tesha said, "We need to work together to do this, and we have to hurry in order to finish because we don't have much time."

Cassandra said, "You read first and I'll put up the cutouts. When we're halfway through the story, then I'll read and you put up the characters."

They began the activity and halfway through the story, they switched roles. Each time they came to the rhyme, "Run, run as fast as you can, You can't catch me, I'm the Gingerbread Man!" they read together, laughing, and saying how much fun they were having.

Leaders who were respected by the others often emerged within groups, as the following example shows:

> Ryan, Alex, and Gabe worked on illustrations for a story they wrote called *The Golden Sword*. They spread out a large picture of a castle and Ryan began to outline it in black marker.
>
> *Ryan*: Alex, go get a black marker and help me outline this.
> *Gabe*: Where should I start?
> *Ryan*: Right over here.
> (Alex returned with the marker.)
> *Ryan*: Alex, go get a red crayon.
> *Alex*: Why, Ryan?
> *Ryan*: Because we forgot to color this.
> *Alex:* Will a red pencil do?
> *Ryan*: I guess so. But, Alex, we also need a blue crayon.
> *Alex*: What do we need it for?
> *Ryan*: We forgot to color in the water over here.
> *Gabe*: What color should I do the sky?
> *Ryan*: Blue will look good.

Formation of group rules and the emergence of leaders was observed in 175 of the 318 group incidents recorded, or 55% of the time.

Collaboration within Groups. Children working in groups generally collaborated by helping each other carry out literacy projects, taking turns, sharing materials, and offering information. For example,

> Rachel and Tashiba decided to use a feltboard together. Rachel said, "I want to do this one, *The Tortoise and the Hare*" (Stevens, 1971). Tashiba said, "Let's do this one, *Rumpelstiltskin*" (Stobbs, 1970). "I know," said Rachel, "we'll do them both."
>
> They decided to do *Rumpelstiltskin* first. Namita and Chabela joined them, but sat silently and listened while Rachel read the story and Tashiba manipulated the cutouts on the feltboard.
>
> At the end of the story, Namita asked if she and Chabela could read to Rachel and Tashiba. Everyone seemed pleased as Namita read, Chabela manipulated the figures, and Rachel and Tashiba listened.

Of the 318 group episodes observed, collaboration was identified in 291, or 92% of the time.

Peer Tutoring. Peer tutoring can be distinguished from peer collaboration because peer tutoring involves one child in a teaching role, offering guidance and assistance to another child. Peer collaboration, on the other hand, involves students offering equal amounts of help to each other. Peer tutoring occurred in at least 66, or 20%, of the 318 group episodes recorded. Much of the tutoring was not recorded because children often whispered words and hints to help each other that were inaudible to most observers and not picked up on videotape.

As informal peer tutors, children in the 66 identified groups assisted each other in reading words, spelling, and making decisions for the completion of literacy projects. Children also sought each other's opinions and offered positive reinforcement to other group members. The following episode illustrates the variety of peer tutoring activity:

> Jason and Tiffany were in a cozy area of the library corner, each holding a stuffed tiger. Although both children were assigned to basic skills classrooms, in the present

situation Tiffany assumed the role of traditional teacher to help Jason, who had started looking through a book of nursery rhymes.

"Let's read this one," Tiffany said. Jason agreed, and Tiffany told him to begin reading. "I forgot the first word. What does H-E-Y say?" "That says, 'Hey diddle diddle,'" said Tiffany. "Now you read." Jason continued, "The cat and the . . ." He paused, and Tiffany said, "Look at the letter, it's an F. F. It says 'the fiddle.'" "Oh," said Jason, ". . . the fiddle. The cow jumped over the moon. Let's do another one." Tiffany said okay. They turned the page and Jason began to read: "Little Betty Blue lost her shoe." "Wait," Tiffany interrupted, "You gotta read the title first."

Conflicts. According to Piaget (1959), learning occurs when a conflict arises and those involved figure out how to settle it. Although collaboration was most evident within the groups, conflicts did occur in 21 (6%) of the 318 recorded group episodes. Some conflicts arose while groups were organizing and often concerned what activity or book to select. Other conflicts occurred in sharing materials and taking turns. Still others dealt directly with carrying out literacy activities. Most conflicts arose naturally and understandably because the children participating were generally not accustomed to working in groups nor to making many of their own decisions about what to do and whom to do it with. Nevertheless, the majority of conflicts were easily resolved.

The following anecdote describes a typical incident of conflict and resolution:

Tasha and Tamika decided to write a story together about a king and a queen. Tasha said, "We have to begin with 'Once upon a time the king and queen lived in a castle.'" She wrote the sentence, but spelled *castle* K-A-S-A-L. "You spelled *castle* wrong," said Tamika. "It's C-A-S-T-L-E, not K-A-S-A-L." But, Tasha responded, "Mine sounds right and yours doesn't." "Yours does seem like it's right," said Tamika, "but spelling is silly sometimes and I'm right."

"I'll get the dictionary and prove you are wrong," said Tasha. She looked under "K" for *castle* and couldn't find it, so reluctantly she looked under "C" and found *castle* as Tamika had spelled it. "Okay," she said, "you're right. But it still doesn't look right."

Children themselves resolved 90% of the conflicts recorded; in the other 10%, either the groups involved disbanded or the teacher intervened.

Literacy Behavior

Most literacy activities that took place during independent reading and writing periods were dynamic, manipulative, and quite different from those traditional to basal reading instruction. They fell into three broad categories: oral reading, silent reading, and writing.

Oral reading. Oral reading provides practice with pronunciation, intonation, and pacing and can be used to evaluate and analyze reading performance. Oral reading was common during IRWPs, occurring in 57% of the 714 recorded episodes. Children read aloud to themselves and to each other in pairs and small groups. They shared books, magazines, and newspapers, as the following episode illustrates:

> Larry grabbed the book *The Magic School Bus Lost in the Solar System* (Cole, 1990) from a bookshelf in the library corner. "I gotta read this book again," he said to Larry. "It's neat."
>
> The boys sat down on the carpet and Shon, who was standing close by, asked if he could read too and they agreed. Larry began reading, then Bryan took a turn and so did Shon. They listened attentively to each other, and when they finished, they chose another book to read together.

Oral reading is limited in traditional classroom settings and often tedious for those who are listening. Oral reading can become unpleasant and threatening to children when their teachers coerce them into reading aloud class materials they have not chosen before an entire class. Unfortunately, coerced oral reading is common in traditional settings. During IRWPs, on the other hand, children often choose to read orally and others choose to listen, for in the IRWP context, oral reading is productive and pleasant.

Silent Reading. There is a relationship between the amount of time spent reading and achievement in reading (Anderson, Fielding, & Wilson, 1988; Greaney & Hegarty, 1985; Morrow, 1993; Taylor, Frye, & Maruyama, 1990). For more than two decades, various schools have instituted periods of sustained silent reading to give children the opportunity to read. Laudable as their goal is, such periods tend to be somewhat contrived because everyone is expected to do the same thing at the same time. In contrast, an IRWP gives individuals the opportunity to read silently to themselves as one of several options.

Silent reading was apparent in 56% of the episodes recorded during this study. Children read silently alone or with others nearby or next to them. They curled up on rugs or leaned against pillows or each other, often holding stuffed animals as they read. They read at their desks, in closets, and under desks and tables. One child read silently while walking slowly around the classroom. The following incident is typical of the silent reading observed during the study:

> A group of five children were reading silently in the literacy center. Leaning on a pillow, Tim read a magazine. Paul leaned against him to read from the same magazine. Mercedes sat in a rocking chair and read *Bringing the Rain to Kapiti Plain* (Aardema, 1989). Kelly and Stephanie were under a shelf reading from two different copies of the same book.

In interviews, both children and teachers said that the reading they did during IRWPs — including both oral and silent reading — improved their ability as readers and writers because they read so much. Children also noted that during IRWPs, help was readily available from both their peers and the teacher, and that taking advantage of that fact helped them improve reading.

Writing. According to Graves (1975), when they are allowed to choose their topic, children write more often and write longer pieces than when not given a choice. Indeed, children apparently write quite naturally about things that mean something to them (Holdaway, 1979; Taylor, 1983). The IRWP provides a homelike environment in which children can write naturally and can choose to write often.

During the program described here, children wrote in pairs and small groups more often than they did alone. Some writing projects lasted for an entire IRWP, and some even extended into later IRWPs. Projects often

culminated in performances presented by their creators to an entire class through such vehicles as puppet shows, roll movies, narrations with musical background, and plays with scenery. As the following incident illustrates, the projects were almost always sponsored and directed by children themselves:

> Paul said to Kevin, "I'm writing a series of stories. Each book is a different part but about the same character. I have *The Horse Named Jack, Jack Becomes a Police Horse,* and now I'm on the third called *Jack Enters a Horse Race.*" "Can I read the one where he's a police horse?" Kevin asked.
>
> "Okay," Paul answered, "but you really should read *The Horse Named Jack* first since they go in order."

As with reading, writing occurred all over the classroom. The table in a typical literacy center's "Author's Spot" could accommodate only three children, so students wrote at their own desks or while sitting on the floor. Often they moved desks together to make large working surfaces on which several of them could write at once.

In interviews, teachers and children again said that their writing improved because they did so much of it. Teachers also expressed surprise that children who would never write in the traditional classroom setting chose to do so during an IRWP. Some were amazed at the variety of topics children chose to write about, expressing the belief, for instance, that children would never have written about such a topic as the Persian Gulf War if it had been assigned by the teacher in the traditional classroom.

Although only 24% of the recorded incidents involved writing, each incident was so long — often lasting the full 30 minutes of an IRWP — that the time involved came to 3,710 minutes or about 61 hours.

Teacher Participation in IRWPs

In a traditional classroom, the rules of classroom interaction established at the beginning of a school year typically constrain the teacher's attempts to balance individual and group needs (Bossert, 1979). Student opportunities to speak are limited (Sirotnik, 1983): During conventional recitation, for instance, teachers control both how long a child may talk and what he or she may talk about. However, limitations also inhibit a teacher's effectiveness. Giving too much attention to any one student, for instance, reduces instructional time for others and sometimes results in a group's loss of focus.

During an IRWP, in contrast, a teacher can respond to the needs of one student or small group without inhibiting the activities or sacrificing the attentiveness-to-task of other students. In fact, with its emphasis on collaborative learning, the multitask structure of the IRWP changes the teacher's role from "sole source" to "guide on the side" — that is, the teacher becomes facilitator and participant. As the following example shows, teachers can more easily recognize and respond to a student's emerging insights (Golub, 1988), and can support rather than totally direct students' efforts at socialization and development of literacy:

> As Mrs. Olsen circulated near where Sarah and Kim were writing a story, Kim asked her how to spell *suddenly.* Mrs. Olsen spelled the word, then added out of curiosity, "Okay, suddenly what?"
>
> Sarah read a portion of their story, and Mrs. Olsen asked, "Since you talk about

your sister making you mad in your story, why not write about why she makes you mad?"

"Okay," Sarah said. "Let's see, one thing is she just sits by the phone all day long, waiting for it to ring for her, and when it does, it is always her friends." Mrs. Olsen smiled and said, "That would make me angry, too."

Teachers learned to relax during IRWPs because they could participate, facilitate, and instruct as needed. Perceived by students as friendly and pleasant, they could also be more flexible than they were during conventional recitation periods. When not working directly with children during IRWPs, teachers often sat among them, reading their own books or writing.

OUTCOMES

Institution of IRWPs led to the following positive outcomes:

(1) Children who took part in IRWPs (a) expressed positive attitudes toward reading and writing, (b) participated actively in comprehension activities, and (c) demonstrated improved reading skills as measured by comprehension tests given in the experimental portion of the research (Morrow, 1992).

(2) Children who had been identified as having special needs or difficulties in learning showed positive literacy behaviors.

(3) Teachers experienced change in both their behaviors and their perceptions of alternative strategies for literacy development.

Appreciation for Reading and Writing

As stated in the opening paragraph of this report, a central goal for reading instruction is to develop a reader who has a positive attitude toward reading, who appreciates and enjoys reading, and who therefore will read (NRRC, 1991). Children who associate reading with pleasure will read more and improve their reading ability. The fact that the children who participated in the program described here engaged in literacy activities independently and in a self-directed manner is itself evidence of their positive attitudes toward reading and writing. Few discipline problems arose during IRWPs and few children deviated from task. The interview data consistently reflect positive attitudes toward IRWPs and indicate reasons for those attitudes.

When asked to describe how they felt about IRWPs, 68 of the 98 children interviewed said something similar in essence to "Reading and writing is fun during this time. It makes you happy." Sixty reported something similar in essence to "It makes you like to read and write because you can choose what you want to do and where you want to do it. You can decide to read or write alone or with others. If you work with others, you can decide who with." The teachers confirmed the children's positive statements: their students liked having choices in activity, work space, and working companions. The positive appreciation of literature professed in the overwhelming majority of interviews is epitomized in this reported observation:

Yassin was leaning on a pillow on the carpet and reading a story. He finished reading, sat up, raised the book over his head, and exclaimed out loud, but to himself, "This is such a lovely story. It

makes me feel so good, I think I'll read it again." He settled into his former position and began to read.

In all recorded observations, only one percent of the children observed were recorded as being off task. All other recorded incidents demonstrated children's positive attitudes toward reading and writing.

Improved Reading Comprehension, Language, and Writing

Experimental data (Morrow, 1992) demonstrated that participating children's writing ability, comprehension, sense of story structure, vocabulary, and language complexity improved by the end of the study.

Additional information about comprehension development was supplied by the qualitative data. Comprehension occurs at literal, interpretive, and critical levels of understanding. Typically, it is taught by posing questions for children to answer after they have read a passage. This questioning practice is actually more of a testing than a teaching approach, and there is no assurance that it involves the child in actively constructing meaning from text. In contrast, test results of children who participated in IRWP activity demonstrated comprehension gains at all three levels, gains apparently achieved spontaneously as students engaged in self-selected activities and levels of involvement.

Literal comprehension requires the ability to understand, remember, and represent the sequence, facts, and structural elements of a story. That ability is evident in the following episode:

> Christopher and Albert decided to retell a story — *Amelia Bedelia's Family Album* (Parish, 1988) — through a roll movie. Chris told the story as Albert rolled the paper in the roll-movie box to each appropriate scene. Chris demonstrated literal comprehension of the story as he retold it, using dialogue from the book, and including other necessary details as he went along.

Inferential comprehension requires children to think beyond the text. It calls on such abilities as understanding characters' feelings, predicting outcomes, and putting oneself in the place of a character to imagine alternative courses of action. Inferential comprehension requires children to recognize and understand information that is not explicitly stated or documented in a text. The following episode illustrates such understanding:

> Darren read *Frog and Toad Are Friends* (Lobel, 1970). He decided to read it again using puppets. Darren retold the story with the puppets and took the parts of the characters in the story by changing his voice and inferring how they sounded. Several children gathered around to watch and listen.

Critical comprehension requires hypothesizing, analyzing, judging, and drawing conclusions. It entails making comparisons and distinguishing fact from opinion. The following incident offers evidence of critical thinking:

> Charlene and Tesha finished reading *Stone Soup* (Linquist, 1970). Charlene turned back to the part where the soldiers first came into town looking for food and said, "Tesha, can you believe what those soldiers said — 'We can make soup from a stone'? Those people in that town must be

> so dumb to believe that. Boy, did those guys fool them! This could never have happened in real life. No one would listen."

Of the 714 recorded incidents in which literacy activities took place, 522 (or 74%) were coded as having documented literal comprehension, 150 (or 21%) interpretive comprehension, and 28 (or 4%) critical comprehension.

For the most part, we think of comprehension development as occurring primarily when teachers ask children questions. In self-directed activities during IRWPs, however, children demonstrated comprehension of story in almost every incident recorded. None of those incidents involved the necessary presence of a teacher, nor a lesson prepared in advance by a teacher armed with questions and prescribed responses. Our interview data reveal that children were aware that their comprehension was enhanced by their participation in IRWPs. When asked "What do you learn during IRWPs?" 40 of 98 children responded that they learned to understand what they were reading and they learned a lot of new words. Every teacher interviewed said that during IRWPs children enhanced their comprehension, sense of story structure, and vocabulary.

Gains among Children with Special Needs

Data gathered by direct observation and videotape also showed that children increased their voluntary participation in cooperative literacy activities in spite of the fact that many of them had previously been identified as children with special needs. A large percentage attended basic skills (Chapter One) classes because their development in reading and writing was considered below grade level, or they were enrolled in English as a Second Language (ESL) classes, or they were classified as having social and emotional problems. Some fell into more than one of these categories.

Yet, they participated in IRWPs with peers who had not been assigned to any of those classifications. In fact, third-party observers usually could not tell which students fell into such classifications until the classroom teachers pointed them out. Often, children who had been assigned to those special classifications emerged as leaders; they found activities in which they excelled, so their special needs were frequently not obvious. The following episodes illustrate the literacy behaviors demonstrated by children with special needs:

> Patrick was repeating second grade and receiving basic skills instruction. He emerged as a leader during IRWPs, frequently organizing and carrying out projects with groups. When he decided that he wanted to make a roll movie, he was able to entice Tarene, Neela, Elvira, and Corine to work with him. He picked the story *Bedtime for Frances* (Hoban, 1960). He delegated responsibility to those involved, determining, for example, who should draw which picture and deciding that the color yellow should not be used because it wouldn't show up very well. The project took a week to complete. It was presented to the class, with each child reading the portion of the book that went with the illustration he or she had done.

> Tina, who spoke only Spanish when she entered the class at midyear, was at first a nonparticipant. During the IRWP, Tina would choose a book from the literacy

center and look at the pictures. One day she inched slowly over to two girls who were doing a puppet show. Esther asked Tina if she wanted to have a puppet to help. Tina smiled, so Esther gave her a puppet and showed her how to use it on the puppet stage. Although Tina did not speak, she moved the puppet around when it was her turn to participate, and Esther did the talking.

Jack had been classified as autistic. In routine instruction, he never spoke nor did he interact with other children. During IRWP sessions, on the other hand, he always went to the Author's Spot and wrote stories that he hung on the bulletin board in a space left for children to post their work. From time to time, other children sat next to him, and he was observed on several occasions reading his stories to children who had asked him to. He was also observed talking about his work with other children. Nevertheless, Jack neither spoke nor interacted with anyone else at any other time during the entire school day.

Thirty children were identified as having special needs. During the study, every one of them was observed participating in at least one literacy behavior. In the interviews, teachers commented that there seemed to be something for everyone during an IRWP. Children lacking basic skills and considered "at risk" found literacy activities they could enjoy and succeed at. ESL children found ways to participate, and the environment appeared excellent for enhancing language development. Children with emotional problems, who normally tended to be withdrawn or to behave disruptively, became productive participants.

When children with special needs participated in literacy activities, they often did so through manipulatives. The opportunity to use manipulatives apparently motivated these children to participate in literacy activities during IRWPs.

Change in Teachers' Behavior and Beliefs about Literacy Development

The teachers acted as facilitators, instructors, and participants during IRWPs. They helped children get organized, they gave instructional assistance when requested, they took part in activities with children, and they read on their own. Participants in a social setting, they interacted with students in a friendly manner.

During individual interviews, the comments of the five teachers who participated in the program were extremely consistent. In general, these teachers reported initial skepticism about the amount of time the program would take away from other classroom activities (e.g., basal reading instruction), but by the end of the experiment, they saw literature as an integral part of reading instruction. All reported prior concerns about getting children to work on tasks independently during the IRWP, but, in time, all five were able to work such problems through. All planned to continue the program and to further integrate literature with their basal instruction. When asked what they learned from participating in the program, they described specific changes in their own behavior and attitudes. Among their responses were the following:

Children are capable of cooperating and collaborating independently in reading and writing activities and of learning from each other.

In an atmosphere that provides choice of activity and working companions,

children of all ability levels chose to work together, which does not normally occur.

There is something for everyone in the program, advanced and slower children alike.

It is the first time that I realized how important it is for me to model reading and writing for children and to interact with them during the IRWP.

It made me more flexible and spontaneous and allowed me to facilitate learning instead of always teaching.

I learned that the basal serves to organize children's skill development, specifically in the area of word recognition. The literature program emphasizes vocabulary and comprehension. The programs complement each other and should be used simultaneously.

Children who don't readily participate in reading and writing did so during the IRWP. I think that is because they were the ones making the decisions about what they would do.

DISCUSSION

The literature-based reading program reported here was not intended to take the place of more traditional types of literacy instruction. Nevertheless, when children were given the chance to select their activities and work with others, a great deal of self-sponsored social literacy behavior occurred. Our findings suggest that (a) the physical design of the literacy centers and the materials within them, plus (b) teacher modeling of pleasurable storybook reading and the use of literature manipulatives, and (c) time for children to work within such an environment motivated socially interactive literacy activity which in turn led to the increased literacy performance documented by Morrow (1992). Beyond those documented cognitive gains, positive attitudes toward reading and writing were apparent in the enthusiasm the children expressed as they participated in the IRWPs and in their comments during interviews. Furthermore, the freedom to choose that was inherent in the IRWP was at least as important to the children as the suggested activities and the manipulative nature of many of the available materials.

Word recognition and the acquisition of knowledge about print were the components of the reading process most difficult to document in our analyses of the program's results. However, one can infer from the amount of oral and silent reading that took place, from recorded evidence of comprehension, and from the nature of the writing activities, that children were developing word recognition skills within the program. Context clues and sound-symbol relationships, for instance, are a priori necessities for the extensive reading, comprehension, and writing documented during the literature-based IRWPs.

That the program was particularly effective for children with learning difficulties, allowing them to engage enjoyably in literacy activities with peers of differing abilities and to do so with no disruption, could be attributed to the absence of stigma, the common use of positive reinforcement, and the intrinsic rewards of completing tasks successfully. Moreover, the choice offered by the program was helpful for children with learning problems. The choices given them during IRWPs were substantial when compared to the essential lack of choice inherent in traditional reading instruction,

based as it is on teacher-assigned work, but the choices were also offered within clear limits. Rules governed such program elements as the number of activities in which a student could engage during a given IRWP, the amount of material a student could use at any given time, and the replacement of materials after use. Because neither the children nor the teachers were initially familiar with such organizational strategies, those rules were reviewed at the beginning of each IRWP, and when necessary, teachers helped children make their selections. Within a month, the program's combination of consistent rules, teachers' roles in modeling and facilitating, and children's active involvement helped students manage the decisions they had to make. Thus, it seems likely that the teachers' good classroom management helped overcome the control problems usually attributed to a child's learning problems or cultural background.

What occurred in the IRWPs reflects Holdaway's (1979) theory of developmental learning as characterized by (a) self-regulated, individualized activities, (b) frequent social interaction with peers and adults, and (c) an environment rich with materials in which holistic acts of reading and writing can occur by choice. He defines four processes that enable children to acquire literacy abilities, all of which were provided during the IRWP: (a) observation of literacy behaviors, (b) collaboration in literacy activities through social interaction with peers or adults, (c) practice, as children try out what they have learned, and (d) performance, which allows a child to share what has been learned and obtain approval from supportive, interested peers and adults.

The IRWP also demonstrated the principles of good job design. Hackman and Oldham (1980) maintain that people are intrinsically motivated to succeed at high levels when three conditions are met. First, the work must be meaningful, allowing use of a variety of skills to accomplish whole, identifiable results rather than, for instance, simply adding one widget to a product on an assembly line. Second, the worker must be given a measure of autonomy in order to feel responsibility for the work. Finally, the worker must receive feedback from peers and supervisors and a sense of accomplishment from the task itself.

Many educators are reluctant to allow children to make decisions about their own learning. We are reluctant to let them participate in self-directed cooperative situations because we fear those situations will reduce teachers' sense of control and make the school look disorganized. The results of this study challenge those fears. They indicate, rather, that with time and appropriate environmental preparation, children can and will engage in productive, self-directed literacy activities, both alone and with others, and that such participation can increase their interest in and capacity for reading and writing.

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